Beyond Business as Usual: Enterprise Architecture for Governments of the Future
Embodying on an Enterprise Architecture (EA) journey for digital transformation is a big step for government enterprises. The typical benefits are transformation from a siloed, hierarchical and citizen-as-a-spectator operating model to a “Whole-of-Government” model. In today’s government enterprises, schemes and policies focus on citizen-centricity and ease-of-access to information. Digital transformation is the key to making that happen. The adoption requires considerable support and goodwill from political and executive leadership teams along the activities of planning, designing, executing, and benefit-realization phases.

Sandipan Chakraborti, Enterprise Architect, Wipro, speaks about a practical and effective approach to adoption of Enterprise Architecture and Integration Frameworks to enable government enterprises to successfully transform through EA.

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A: Enterprise Architecture transformation programs for the government are fundamentally different from those of other commercial enterprises. It involves sheer complexity in terms of the number of services, integration touch points and scale of operations to be realized through EA. It looks into the aspect of unifying the governmental functions as one entity through the Whole-of-Government paradigm, whereas commercial enterprises would primarily focus on one or few areas for transformation.

A clear understanding of the objectives in terms of missions and values that need to be realized over a course of time is critical. We have seen this aspect in the success of an Indian State’s EA adoption where a clear set of mission objectives and value drivers were laid out at the start of the EA program. A well-articulated set of guiding principles help in defining the requirement specifications for the future state of applications, services and data architectures. Identification of the government’s elemental processes is a critical activity for embarking on EA journey. These processes are atomic building blocks, which are required to realize a complete business process of a government function.

Conducting an ABC analysis for the prioritization of services (G2G, G2B, G2C and G2E) is also important to make an impact through EA. We need to bear in mind that consolidation and automation of services need to be carried out wherever possible and technically feasible. Think of introducing game changing transformational services that can significantly improve the way current business model works. A case in point on transformational service are smart badges which are wearable devices for doctors and paramedics and RFID tags for patients. It can be used to link patient eHealth records to demographic profile and other identity-related information such as Aadhar.

Measurement of service efficiencies in the form of KPIs would need to be defined. KPIs can be defined at different levels such as at mission or departmental levels or even at crosscutting application or services levels, which need to be re-architected as part of the digital transformation. A case in point is the aforementioned Indian State’s EA strategy, which used multilevel KPIs - one at the mission level and the other at the business applications levels. This way it was easy to track and monitor the benefits realization in line with mission objectives and value drivers at granular levels.

Q: What are your recommendations to government enterprises embarking on an EA journey to build a Digital State?
A critical piece in the overall EA program is to ensure applications, services and data are integrated seamlessly and provide the citizenry, government employees and business fast access to relevant information on demand. Having well-integrated and inter-operable applications, services and data landscape is also important for predictability and rapid decision making by the government machinery. We see some of its benefits in natural disaster management, people identity and demographic analysis, and land management, etc., to name a few.

Q: What should be the approach for building an integrated technology landscape?

A: A suitable Integration framework has to be developed. Its objective would be to provide guidance to System Integrators who would integrate processes, services, applications and data based on the target state solutions. The typical approach would comprise of defining and implementing a set of architectural standards and guidelines.

We also need to adopt non-invasive application integration strategies such as Enterprise Integration Bus, Data Federation Integration techniques and Data Virtualization to remove the risks of vendor locking, lack of application openness and incompatibility with other platforms. Aggregating services into Composite Application Architectures and adopting Microservices architectures are some of the other best practices that need to be adopted for integration across the application, services and data landscape.

An assessment of data access patterns has to be carried out factoring in the elements of sensitivity of data, the level of control that needs to be retained over structured as well as unstructured content, availability of data and disaster recovery management. The classification and prioritization of e-government applications could be determined on the basis of its cross cutting or shared services nature across the breadth of the enterprise, and also the extent of reengineering effort needed to integrate with existing legacy platforms and services. It is also important to focus on establishment of a Governance function around the defined architectural standards and guidelines.
Q: How can governments ensure effective EA programs?

A: The EA program would require a Governance structure to ensure business benefits are realized on a sustainable basis. There are considerable complexities in terms of management of concerns related to various stakeholders ranging from political and bureaucratic leadership, consulting teams, suppliers, partners, and vendors. The downstream implementation of IT projects resulting in benefits is complex because of the sheer scale and volume of transactions and the number of services it provides. To manage this effectively, there needs to be an implementation roadmap. The roadmap should state in a phased manner the deployment schedule of e-governance projects prioritized on the basis of impact to government.

There should be set of standards and guidelines such as Govt. of India Interoperability Framework for e-governance, a formal governance team and a set of repeatable processes to optimize cost and overhead of IT project delivery. The success of governance would depend on a set of underlying governing principles such as transparency, independence and accountability.

Q: What would be some of the critical success factors for adoption of EA in government sector?

A: Adoption of EA is quite complex and can be challenging. The challenges lie in getting requisite level of participation and contribution towards understanding the current state of governmental landscape - be it on business, applications, services, data, and infrastructure dimensions. Scoping the architectural requirements for governmental businesses is key to achieving success. A continuous process of connecting with the business owners from the governmental departments helps. It is important to try to align the existing business models to the target state without adding complexity to the end user experience. An effective channel of communication between the consulting team and sponsors including members of EA Governance Boards need to be established. Proactive attempts have to be made for appraising the Governance Board on identifying potential risks and threats and reporting on periodic work progress strictly adhering to the board directives.

Conducting periodic review meetings and presenting conceptualized blueprints of services and integration patterns before key stakeholders and getting their mindshare is also a recipe for success. The architectural artifacts have to conform to global architectural standards on modeling.
and notation. Anything less would result in lack of consistency leaving recommendations to individual interpretations. EA Repository and adoption of Architecture Modeling tools are also key to streamlining the process of planning, design and execution of EA, and are being looked at more as a necessity rather than being “nice to have”.

The success for EA in a government context cannot be merely attributed to certain factors. It requires fair amount of evangelism on the benefits of EA to garner support from the stakeholders, engaging with the organization from both an outside-in and inside-out mindset, and handholding the stakeholders to a point of comfort in the EA journey.
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